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REMARKS/ARGUMENTS

This amendment is responsive to the non-final Office Action issued June 17, 2003.

Claims 1-10, 12-24 and 26-38 were rejected as being anticipated by Natarajan et al., US patent 6,539,427. Reconsideration and withdrawal of these rejections are respectfully requested, for the following reasons.

At the outset, it is respectfully submitted that Natarajan does not teach any method of "notifying an application client of an event of interest within a database", as required. Indeed, Natarajan teaches a feedback-based adaptive network in which the configurations of network elements are varied to automatically reconfigure the appropriate network elements to provide a client's need for increased bandwidth, as explicitly stated in Col. 6, lines 43-49. The concerned network elements, according to Natarajan, are part of the communication path between users 202, 214. The network elements of Natarajan may be frame relay devices, such as, for example, routers, as explicitly taught in Col. 7, lines 21-30:

The feedback-based adaptive network of FIG. 2 includes a plurality of network elements 204A, 208A, 208B, 204B, which are part of the communication path between user 202 and user 214. In the embodiment of FIG. 2, each of the network elements 204A and 204B may be, for example, a server or a router which communicate with each other via a wide area network (WAN) 210. The WAN may include a plurality of network elements (NE) 208A, 208B, which may include switches and/or other network elements for providing a communication link between element 204A and 204B.

Therefore, Natarajan et al. do not teach any method of asynchronously notifying an application client of an event of interest within a database, as required by the independent claims presented in the present application. If there is any "event of interest" in Natarajan, it is the detected need for greater bandwidth on the part of the clients 206A and/or 206B. There is no

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provision in the Natarajan reference as a whole of any method for notifying an application client of an event of interest within a database, as required by the pending independent claims:

The Examiner has pointed to the teaching in Natarajan of reporting changing conditions of network elements in the network using notifications, and references the Abstract, Fig. 2 and col. 6, lines 43 to 65 as teaching the claimed step of:

"receiving a subscription to an event name from a logical agent, the event name corresponding to the event of interest"

According to the claimed embodiments of the present application, the "event of interest" recited in the preamble of the independent claims is an event within the database. To emphasize this point, the receiving step of the independent claims are amended herewith to recite:

"receiving a subscription to an event name from a logical agent, the event name corresponding to the event of interest within the database"

Instead, Natarajan discloses:

"As illustrated in FIG. 2, at least a portion of the network elements include an associated event handling entity or event handler which communicates with event server 270. The event handler may be implemented via software, hardware, or a hybrid combination of software and hardware and is configured to function as both an event notification receiving entity and an event notification supplying entity for its associated network element (host device). More specifically, the event handler enables its host device to receive event notification messages relating to the occurrence of one or more events for which the host device has registered to receive notification. Additionally, the event handler is able to provide notification of events related to its host device to the event server. The event server may then broadcast notice of the event to other event handling entities which have subscribed or registered to receive event notification messages relating to that particular event type. When an event notification message is distributed to any one of the network or control elements, it is received by the respective event handler of that element. In a specific embodiment, event notification service may be implemented utilizing an a synchronous notification scheme." (Underlining added for emphasis)

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Therefore, according to Natarajan, subscriptions are not received from logical agents, as claimed in and required by the present independent claims. Instead, subscriptions are received from the host devices themselves. Moreover, as stated above, the events of interest in Natarajan concern events such as additional bandwidth required or errors within the network elements - such as routers - and not events within a database, as required by the claims.

As stated in the present specification, in the middle paragraph of page 10:

"Each event name identifies a particular data or system event within the database 310. According to the present invention, all subscriptions 320 in the system for asynchronous event notification 300 "belong" to an agent and an agent may have multiple subscriptions 320. The database 310, therefore, has no knowledge of the clients 370, 372, 374 and/or 376, as all the database 310 has received are subscriptions 320 to particular event names from agents acting on behalf of one or more clients 370, 372, 374 and/or 376." (Underlining added for emphasis)

In Natarajan, the host devices themselves subscribe to notifications, contrary to what is claimed in each of the pending independent claims. As Natarajan does not teach or suggest receiving a subscription to an event name from a logical agent as claimed herein, the event name corresponding to an event of interest within a database, the 35 USC §102 rejections applied to the independent claims are untenable and should be withdrawn.

The independent claims next recite the step of:

receiving a registration from the application client, the registration including delivery information indicating at least where and how a notification concerning the event is to be delivered;

The outstanding Office Action points to Col. 7, line 66 to col. 8, line 55 and that errors are detected in the network elements for a teaching of the registration receiving step. However, the cited passage in Natarajan instead describes a method of reconfiguring network elements with updated control information via a feedback mechanism. Moreover, Fig. 7 of Natarajan details the

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entire registration procedure disclosed in this reference. As shown in Fig 7, each network element 204A, 204B has its own event handler 274A, 274B. As shown in Fig. 7, each event handler determines which events for which to register with the event handler (step 702) and thereafter registers for the particular event(s) of interest with the event server (step 704). Fig. 7 and the corresponding description at Col. 18, lines 57-63 paraphrased above constitute the totality of the disclosure in Natarajan concerning registering for events.

Natarajan, therefore, does not teach or suggest that the claimed received registration indicates where and how a notification concerning an event of interest within a database is to be delivered, contrary to the Office's assertion. It is believed that this lack of teaching of the claimed subject matter constitutes yet another independent basis for withdrawing the anticipatory rejections applied to the pending claims.

The next claimed step in each of the independent claims is:

"detecting an occurrence of the event within the database;"

As noted above, no events within a database are detected in the Natarajan patent. The only events that are detected in the applied reference are those within network elements (i.e., routers and/or other frame relay device), and not databases. Therefore, that the Natarajan reference fails to teach this step provides the Examiner with yet another basis for withdrawing the 35 USC §103(e) rejections of the pending claims.

Each of the independent claims then recite a step of:

"publishing the notification to a data structure referenced by the event name upon detecting the occurrence of the event;"

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In Natarajan, no notifications concerning events of interest occurring within a database are published. In Natarajan, each of the event handlers 274A, 274B register for particular events with the event server 270. Again, the events for which the event handlers register with the event server are events within the network elements relating to, for example, the need for bandwidth. In Natarajan, there is no teaching that the notifications are published to a data structure referenced by the event name, as required by the pending independent claims.

Indeed, as specifically stated in Natarajan, at Col. 21, lines 23-40.

"Thus, for example, event handler 272 which is associated with data store 252 may monitor the availability of updated control information at data store 252, and notify the event server 270 of the availability of such data as it becomes available. The event server 270 may then send event notification messages to selected network elements which have registered to receive event notification relating to the particular updated control information which has become available at data store 252. Using network element 204A as an example, the event notification message dispatched by event server 270 will be received by event handler 274A. In a specific embodiment, the event handler queues and processes each received event notification message. During processing of the event notification message, the event handler notifies the network element 204A of the event occurrence, whereupon the network element may then take appropriate action. In this way, the event handler 274A serves as an event notification receiving device." (Underlining added for emphasis)

Therefore, Natarajan merely discloses to send event notification messages to selected network elements that have registered to receive such messages. The only means of storing and referencing the received notifications that are disclosed in this reference are a method by which the event handler "queues and processes each received notification message". Natarajan, therefore, does not teach or suggest "publishing the notification to a data structure referenced by the event name upon detecting the occurrence of the event", as required by each of the independent claims.

The independent claims then recite:

"... the registration including delivery information indicating at

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least where and how a notification concerning the event is to be delivered;

"... retrieving the delivery information and formatting the published notification according to the retrieved delivery information"

Natarajan simply does not disclose any retrieving step to retrieve delivery information that indicates at least where and how a notification (of an event within a database) is to be delivered, nor does Natarajan teach or suggest publishing a notification according to any retrieved delivery information. In Natarajan et al., at Col. 9, lines 6-65 and Col. 10, lines 9-61, teach that the event notification may be implemented using CORBA, IP sockets or SNMP. However, there is no teaching or suggestion of formatting the published notification according to retrieved delivery information. In Natarajan, the protocol and formatting appears to be uniform for all deliveries, for all network elements. Therefore, as discussed in Col. 9, lines 51-65, the delivery to the network elements may be made according to one of the several protocols enumerated above. It is not believed that Natarajan teaches or suggests that the formatting of the notifications may be made individually, according to the delivery information retrieved for the intended recipient. As such, it is not believed that the 35 USC §102(3) rejections of the claims are tenable, for this additional reason.

Lastly, the independent claims each recite:

"... asynchronously delivering the formatted notification to the application client over a network."

As Natarajan does not teach or suggest notifications that are formatted according to retrieved delivery information, it cannot teach or suggest the delivery thereof, asynchronously or otherwise. Moreover, the passage cited by the Office regarding this claimed step clearly states that the notifications which are relayed to the network elements by the event service (i.e., the event

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server 270) concern "a change in the network conditions", as explicitly stated in Col. 13, lines 44-46. The recited events in the present application, however, related to events within a database. Natarajan et al. do teach a data store that may be implemented as a database. However, the purpose such a database, as stated in Col. 13, lines 8-22, is to "collect and store current network operating information for subsequent analysis". In the claimed invention, it is events within the database that are of interest and that form the basis of the claimed notifications. In Natarajan, in contrast, the database is solely used as a data store for current network operating conditions for subsequent analysis and the network elements do not register to be notified when changes are made to the database. In Natarajan, the network elements register to receive notifications when changes to the network occur.

For at least the foregoing reasons, reconsideration and withdrawal of the 35 USC §102(e) rejections of the independent claims and of the claims dependent thereon are, therefore, respectfully requested.

As it is believed that the 35 USC §102(e) rejections of each of the independent claims has been overcome, it is not believed that a discussion of the §103(a) rejections of dependent claims 11, 25 and 39 are warranted at this time, as each of these claims includes all of the patentable subject matter of its respective independent claim.

Applicant's attorney believes that all claims are allowable as incorporating allowable subject matter and that the present application is now in condition for an early allowance and passage to issue. If any unresolved issues remain, Examiner Dinh is respectfully invited to contact the undersigned attorney of record at the telephone number indicated below, and whatever is required will be done at once.

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Respectfully submitted,

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